Small Business Innovation Research
Small Business Technology Transfer

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SBIR Program Office
NASA Jet Propulsion Laboratory

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Agenda

- Federal SBIR/STTR Program – An Opportunity
- Information on 11 Agency Programs
- NASA SBIR Program Description
- What Are My Chances?
- How Should I Proceed?
- Proposal Submission and Selection

SBIR/STTR Program Basics

- **Congressionally mandated programs**
- **Programs open door to small business participation in Federal research and development programs**
- **Currently requires11 Federal agency involvement**
- **Congress recently reauthorized SBIR/STTR Program through 2017, reflecting strong political support**

SBIR/STTR Program Funding

- Federal agencies with an extramural R&D budget of over **$100M (SBIR) or $1B (STTR)** must participate in the SBIR and STTR Programs, respectively
- Participating SBIR agencies must reserve **2.5%** of their extramural R&D budget for SBIR and **0.3%** for STTR
  - Beginning in 2012, Agencies are to increase SBIR's percentage by 0.1% annually through 2016, 0.2 in 2017 to **3.2 %**
  - Agencies with STTR Programs are to increase funding to 0.35% in 2012 and 2013, 0.40% in 2014 and 2015, and 0.**45**% in 2016 and each year thereafter
- **Extramural budget** is agency R&D (including FFRDCs and contractor operated facilities) less funds for government owned and operated facilities

11 Federal Agencies Involved

Department of Defense (DOD) (Air Force, Army, Navy, MDA, etc.)	SBIR/STTR
Department of Health & Human Services (HHS/NIH)	SBIR/STTR
National Aeronautics & Space Admin (NASA)	SBIR/STTR
Department of Energy (DOE)	SBIR/STTR
National Science Foundation (NSF)	SBIR/STTR
Department of Homeland Security (DHS)	SBIR
Department of Agriculture (USDA)	SBIR
Department of Commerce (DOC) (NOAA, NIST)	SBIR
Environmental Protection Agency (EPA)	SBIR
Department of Transportation (DOT)	SBIR
Department of Education (ED)	SBIR

Three Phase Programs*

	SBIR	STTR
Phase I	6 months	6-12 months
Project Feasibility	up to $150K	up to $150K
Phase II		
Research & Development	2 years up to $1,000K	2 years up to $1,000K
Phase III		
Commercialization	non-SBIR/non-STTR funds	

* Duration and funding limits are variable by agency.

Agency Programs Vary Significantly

- **Size of Phase I and Phase II awards vary over a wide range**
- **Additional awards when company obtains matching funds from another source**
- **Fast Track Programs that speed up process for selected contracts**
- **Availability of commercialization assistance**

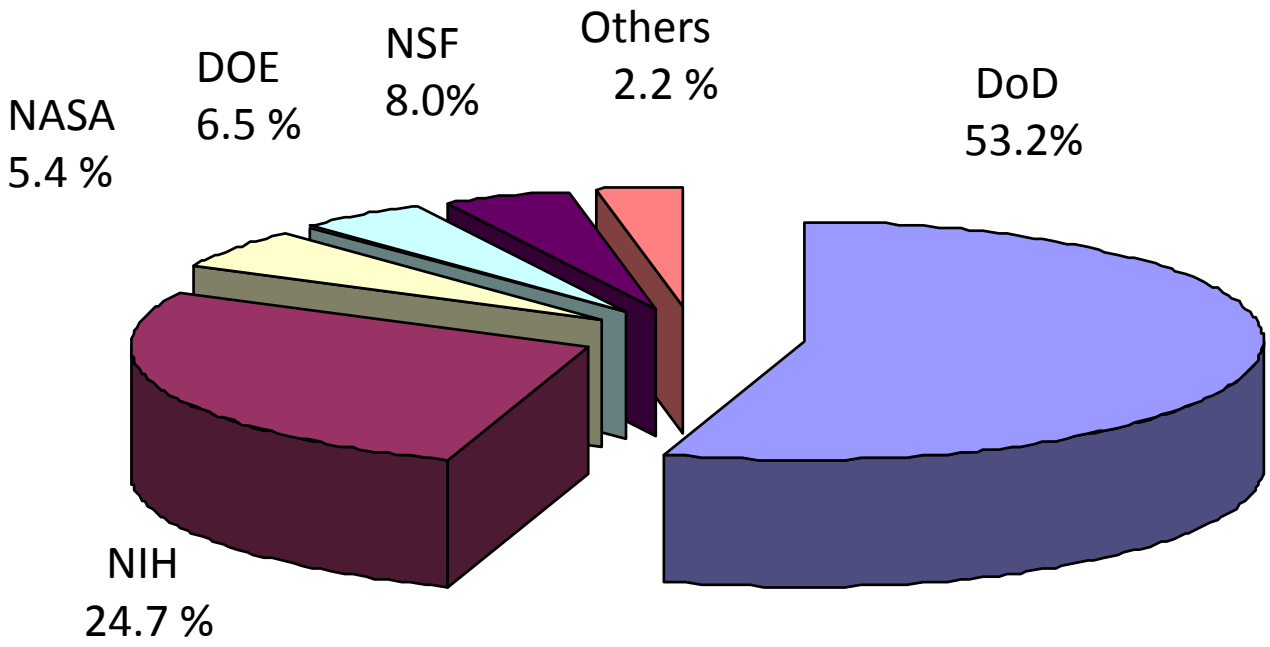
Contracts or Grants *

Contracting Agencies	
DoD	$1,334M
HHS/NIH	$631M
NASA	$138M
EPA	$5M
DOT	$6M
ED	$7M
DOC	$4M
DHS	$10M

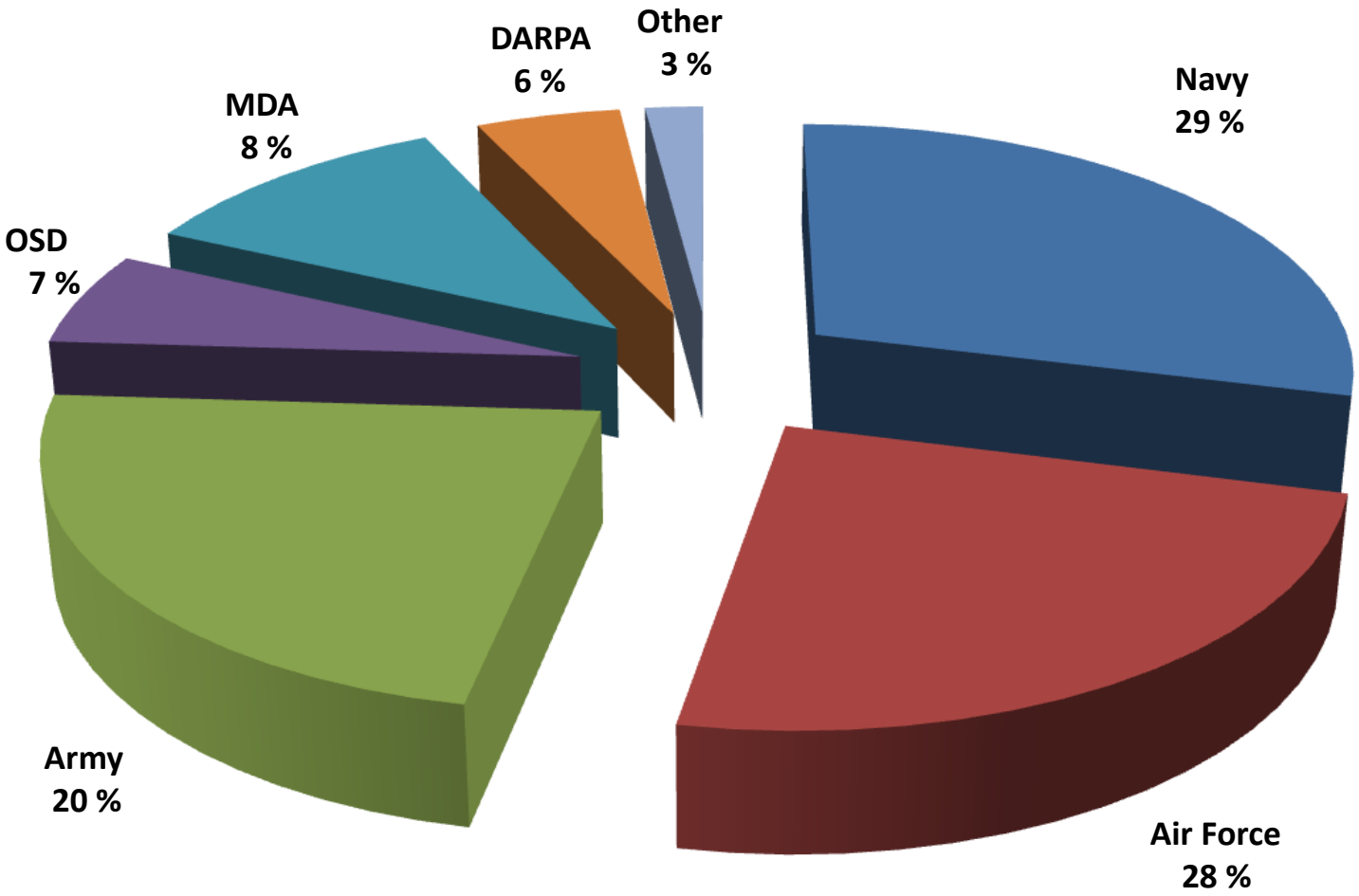
Granting Agencies	
NSF	$205M
USDA	$19M
DOE	$164M
HHS/NIH	
ED	

* Some data is not up to data

SBIR/STTR Agency Funding 2010 $2.56 Billion



DoD SBIR Program (2010)



SBIR/STTR Solicitation Upcoming Dates

Agency	Release Dates	Accepts Dates	Closing Dates
DoD SBIR	Apr 24, 2012	May 24, 2012	Jun 27, 2012
DoD SBIR	Jul 26, 2012	Aug 27, 2012	Sep 26, 2012
DoD STTR	Jul 26, 2012	Aug 27, 2012	Sep 26, 2012
HHS/NIH SBIR/STTR AIDS	May 7, 2012	Sep 7, 2012	May 7,2012 Sep 7, 2012 Jan7 2013
HHS/NIH SBIR/STTR Non AIDS	May 7, 2012	Sep 7, 2012	Apr 5, 2012 Aug 5, 2012 Dec 5, 2012
DOE Release 1[1]	Jul 16, 2012	Aug 13, 2012	Oct 16, 2012
DOE Release 2[1]	Oct 29, 2012	Nov 26, 2012	Feb 5, 2013
NASA SBIR/STTR[2]	Jul 7, 2012	Jul 7, 2012	Sep 4, 2012

1. DOE begins with topic release, funding opportunity announcement, letter of intent followed by application due.
2. Dates are tentative

SBIR/STTR Solicitation Upcoming Dates

NSF	Mar, 2012	Mar, 2012	Jun, 2012
NSF	Sep, 2012	Sep, 2012	Dec, 2012
EPA	Mar 14, 2012	Mar 14, 2012	May 3. 2012
DOT	Apr 2, 2012	Apr 2, 2012	Jun 11, 2012
USDA	Jun, 2012	Jun, 2012	Sep, 2012
DOC NOAA	Oct, 2012	Oct, 2012	Jan, 2013
DOC NIST	Nov 1, 2012	Nov 1, 2012	Jan 24, 2013
ED	Dec, 2012	Dec, 2012	Jan, 2013

NASA SBIR/STTR 2012 Budget

SBIR $124M*
STTR $14.1M*

SBIR - Phase I Contracts: $125K (6 months)**
STTR - Phase I Contracts: $125K (12 months)**
SBIR/STTR - Phase II Contracts: $750K (2 years)**

* Estimate
** For last year, 2011

NASA Participating Centers

Innovative Partnerships Program Elements

SBIR
&
STTR

IPP Seed Fund

Centennial Challenges

New Business Models

Innovation Transfusion

Intellectual Property Management

Technology Transfer

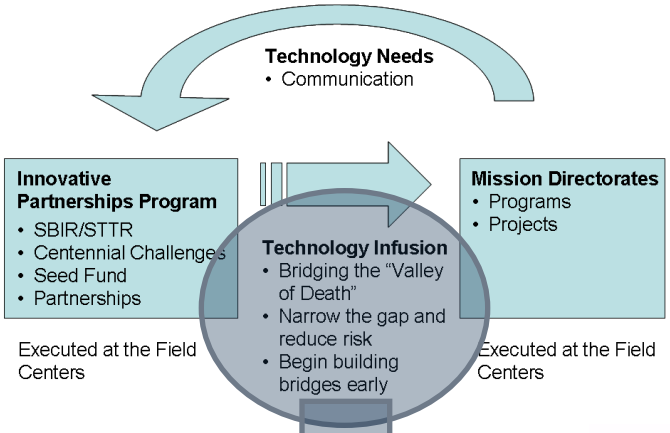
New Innovative Partnerships

http://www.nasa.gov/offices/oct/home/index.html

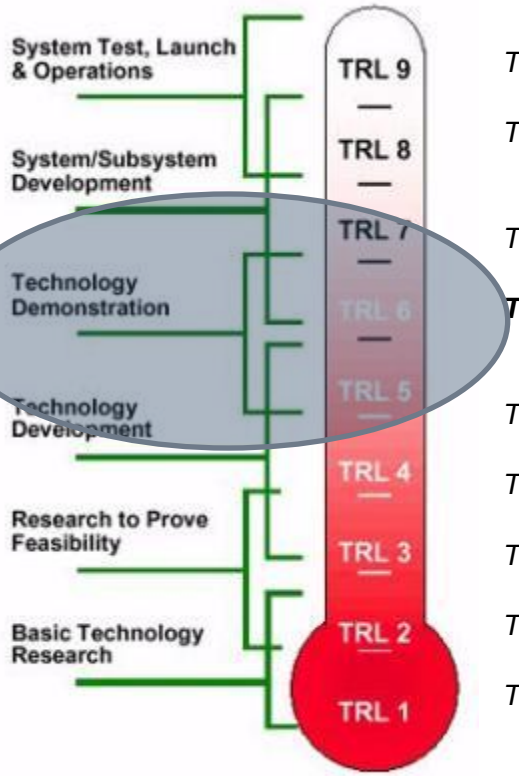
NASA Has an Active Infusion Effort

- Each NASA center has a technology infusion manager
- Insures that programs and projects at each center are aware SBIR/STTR technology developments
- Insure that SBIR/STTR companies have information they need on technology developments within NASA
- Assist SBIR/STTR companies in taking advantage of additional NASA funding opportunities

Technology Demonstration is critical to Infusion



- **As a rule of thumb, projects like technology to be at Technology Readiness Level (TRL) 6 by PDR**
- **Technology Demonstration in relevant environments is critical**

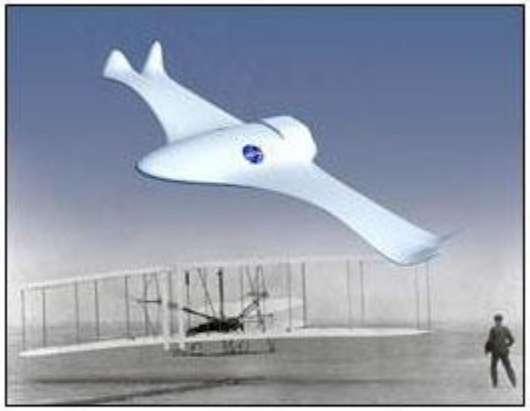


TRL 9	Actual system "flight proven" through successful mission operations.
TRL 8	Actual system completed and "flight qualified" through test and demonstration (ground or space).
TRL 7	System prototype demonstration in a ***space environment***.
TRL 6	System/subsystem model or prototype demonstration in a ***relevant environment*** (ground or space).
TRL 5	Component and/or breadboard validation in ***relevant environment***.
TRL 4	Component and/or breadboard validation in laboratory environment.
TRL 3	Analytical and experimental critical function and/or characteristic proof-of concept.
TRL 2	Technology concept and/or application formulated.
TRL 1	Basic principles observed and reported.

Mission Driven

Partnership with Mission Directorates Drives SBIR/STTR Investment

Aeronautics



Human Explorations and Operations

Science

2011 Aeronautics Research Topics

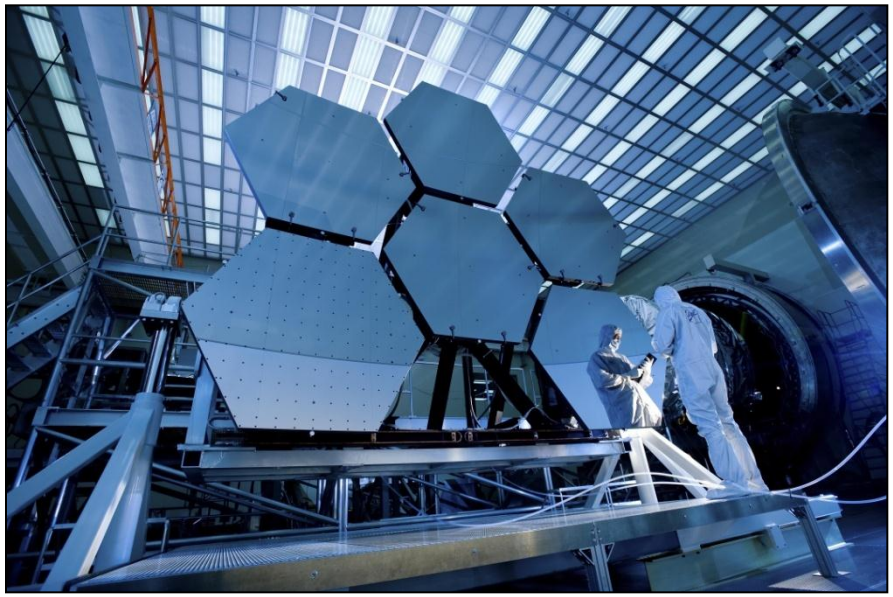
- Aviation Safety
- Fundamental Aeronautics
- Airspace Systems
- Aeronautics Test Technologies
- Integrated System Research Project (ISRP)

2011 Exploration Systems Research Topics (2012 Human Exploration and Operations Topics)

- In Situ Resource Utilization
- Advanced Propulsion
- Life Support and Habitation Systems
- Extra-Vehicular Activity Technology
- Lightweight Spacecraft Materials and Structures
- Autonomous Systems and Avionics
- Human-Robotic Systems
- High-Efficiency Space Power Systems
- Entry, Descent, and Landing (EDL) Technology
- Cryogenic Propellant Storage and Transfer
- Radiation Protection
- Exploration Crew Health Capabilities
- Exploration Medical Capability
- Behavioral Health and Performances
- Space Human Factors and Food Systems
- Space Radiation
- Inflight Biological Sample Preservation and Analysis

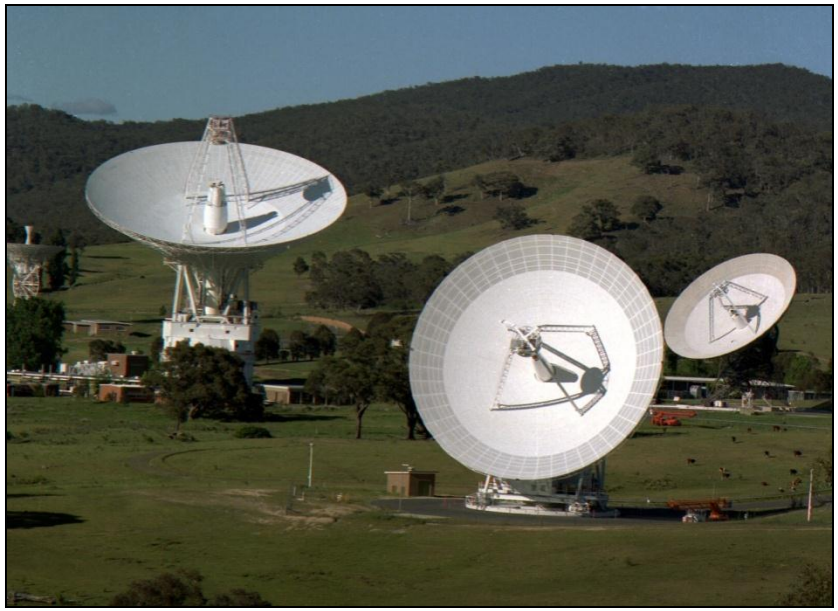
2011 Science Topics

- Sensors, Detectors, and Instruments
- Advanced Telescope Systems
- Spacecraft and Platform Subsystems
- Low-Cost Small Spacecraft and Technologies
- Robotic Exploration Technologies
- Information Technologies



2011 Space Operation Topics
(2012 Human Exploration and Operations Topics)

- Space Communications
- Space Transportation
- Processing and Operations
- Navigation



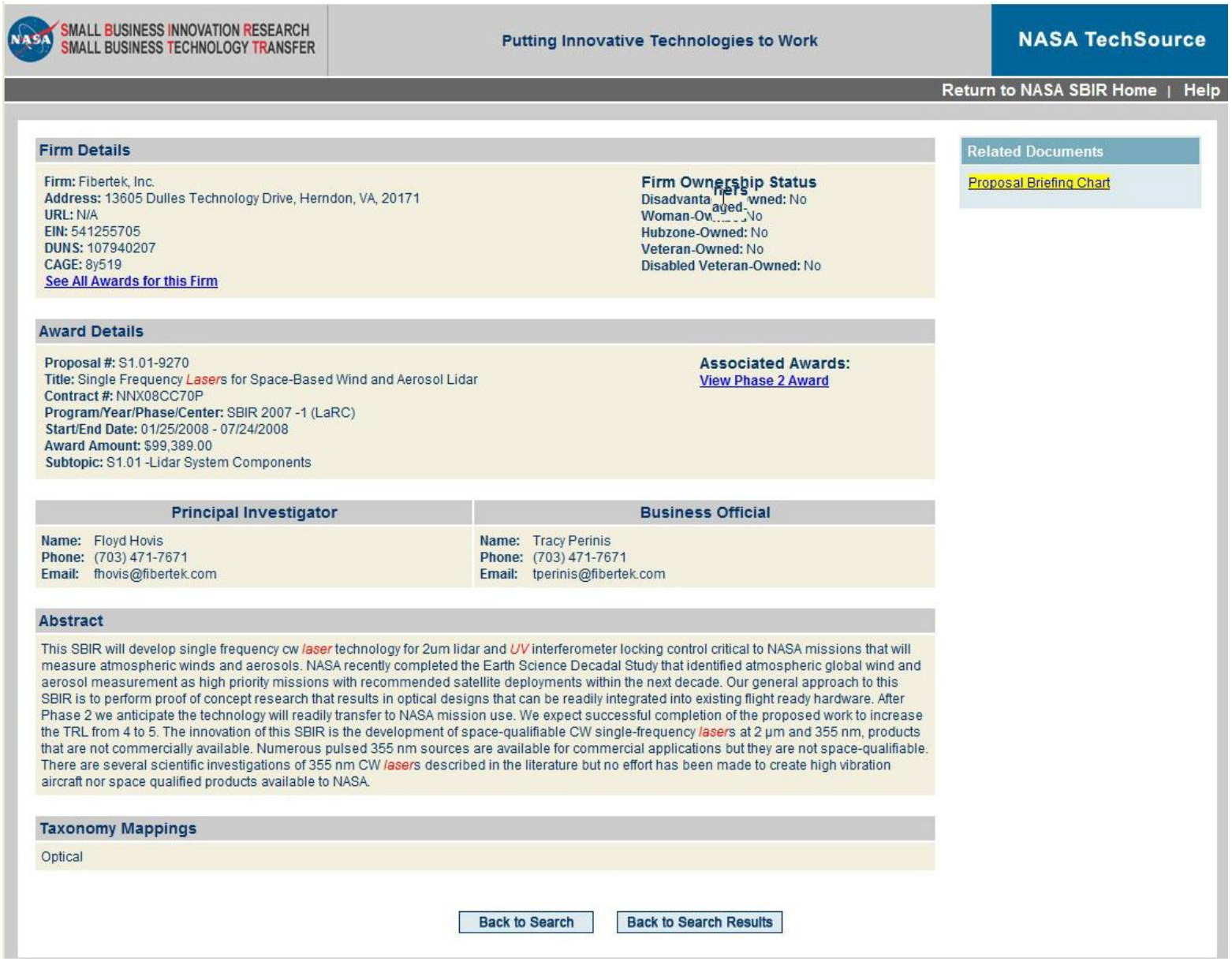
2011 STTR Subtopics - 1

- Center 2011 Technology Investments
- Atmospheric Flight Research and Technology Demonstration
- Technologies for Space Exploration
- Innovative Sensors, Support Subsystems and Detectors for Small Satellite Applications
- Technologies for Compositional Analysis and Mapping

2011 STTR Subtopics - 2

- Innovative Technologies and Approaches for Space
- Ground Effects of Launch Acoustics, Payload Integration, and Flexible Polymer Foam Systems
- Autonomous Systems
- Technologies for Human and Robotic Space Exploration Propulsion Design and Manufacturing
- Rocket Propulsion/Energy Conservation

NASA TechSource



SMALL BUSINESS INNOVATION RESEARCH
SMALL BUSINESS TECHNOLOGY TRANSFER

Putting Innovative Technologies to Work

NASA TechSource

Return to NASA SBIR Home | Help

Firm Details

Firm: Fibertek, Inc.
Address: 13605 Dulles Technology Drive, Herndon, VA, 20171
URL: N/A
EIN: 541255705
DUNS: 107940207
CAGE: 8y519
See All Awards for this Firm

Firm Ownership Status
Disadvanta[illegible]wned: No
Woman-Ow[illegible]: No
Hubzone-Owned: No
Veteran-Owned: No
Disabled Veteran-Owned: No

Related Documents
Proposal Briefing Chart

Award Details

Proposal #: S1.01-9270
Title: Single Frequency *Laser*s for Space-Based Wind and Aerosol Lidar
Contract #: NNX08CC70P
Program/Year/Phase/Center: SBIR 2007 -1 (LaRC)
Start/End Date: 01/25/2008 - 07/24/2008
Award Amount: $99,389.00
Subtopic: S1.01 -Lidar System Components

Associated Awards:
View Phase 2 Award

Principal Investigator	Business Official
Name: Floyd Hovis	**Name:** Tracy Perinis
Phone: (703) 471-7671	**Phone:** (703) 471-7671
Email: fhovis@fibertek.com	**Email:** tperinis@fibertek.com

Abstract

This SBIR will develop single frequency cw *laser* technology for 2um lidar and *UV* interferometer locking control critical to NASA missions that will measure atmospheric winds and aerosols. NASA recently completed the Earth Science Decadal Study that identified atmospheric global wind and aerosol measurement as high priority missions with recommended satellite deployments within the next decade. Our general approach to this SBIR is to perform proof of concept research that results in optical designs that can be readily integrated into existing flight ready hardware. After Phase 2 we anticipate the technology will readily transfer to NASA mission use. We expect successful completion of the proposed work to increase the TRL from 4 to 5. The innovation of this SBIR is the development of space-qualifiable CW single-frequency *laser*s at 2 µm and 355 nm, products that are not commercially available. Numerous pulsed 355 nm sources are available for commercial applications but they are not space-qualifiable. There are several scientific investigations of 355 nm CW *laser*s described in the literature but no effort has been made to create high vibration aircraft nor space qualified products available to NASA.

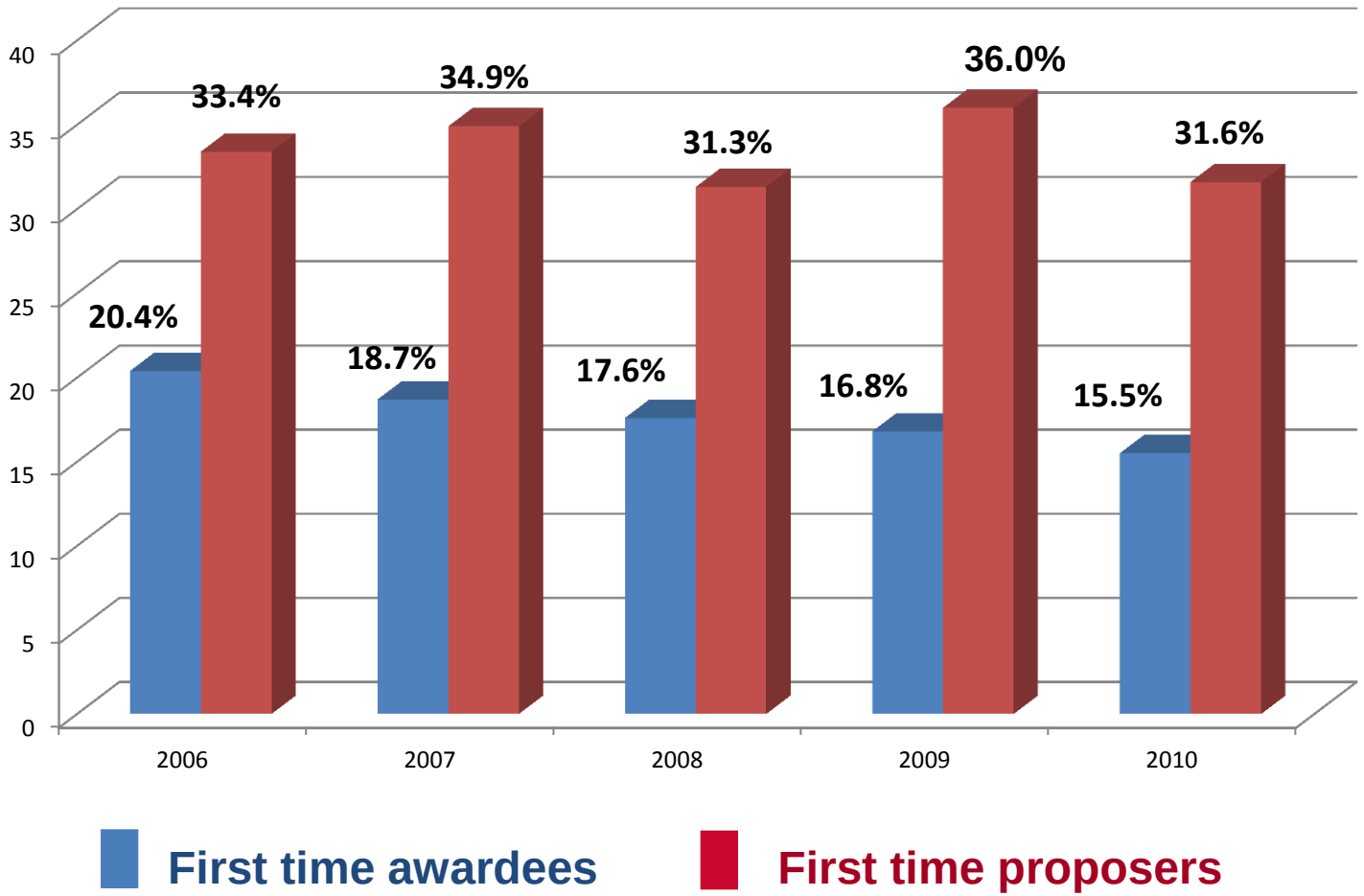
Taxonomy Mappings

Optical

Back to Search | Back to Search Results

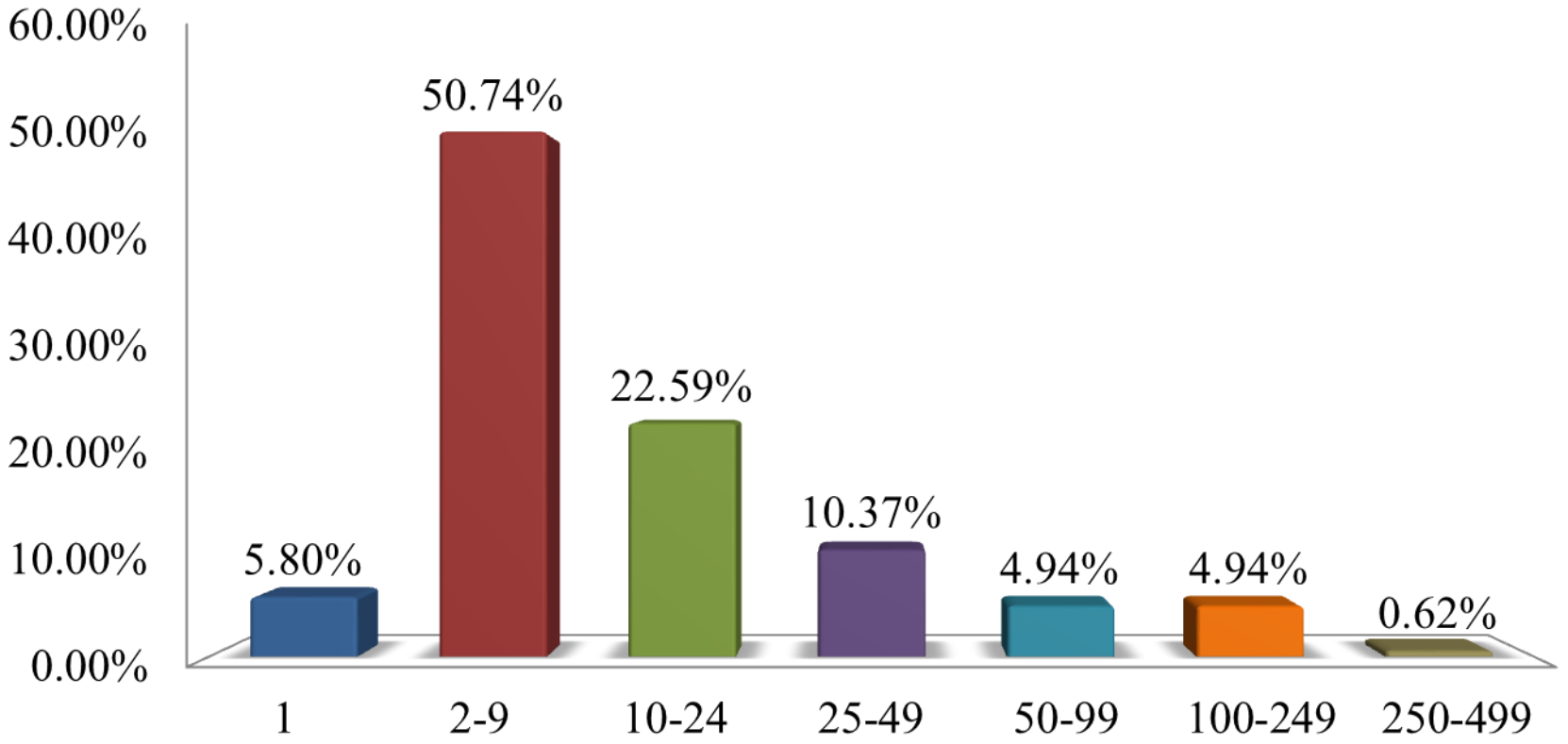
What Are My Chances ?

First Time Awardees and First Time Proposers to NASA SBIR/STTR



SBIR Participants

- ✓ **Firms are typically small and new to the program**
- ✓ **About 1/3 are first-time Phase I awardees**



Number of Employees NASA SBIR Phase I 2009

Innovation – Exploiting New Findings

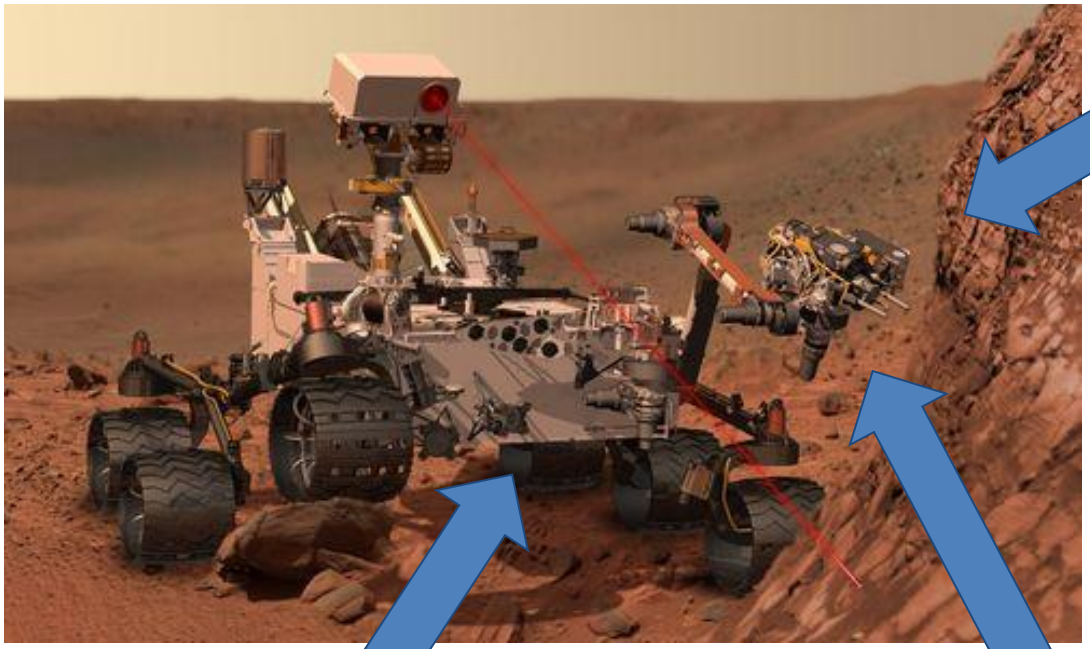
Surface Optics – Successfully took a new mirror silver coating process developed at Lawrence Livermore Laboratories and applied it in a deposition reactor for large mirrors

Starsys Research – Evaluated new materials, manufacturing process steps, and design principles to arrive at a better planetary gearbox

GrammaTech – Expanded capability of primary commercial software product to meet NASA's needs for validating new software

SBIR Technology Infusion Example

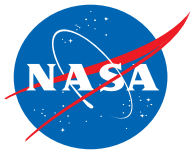
Mars Science Laboratory



Software validation tool provided by GrammaTech

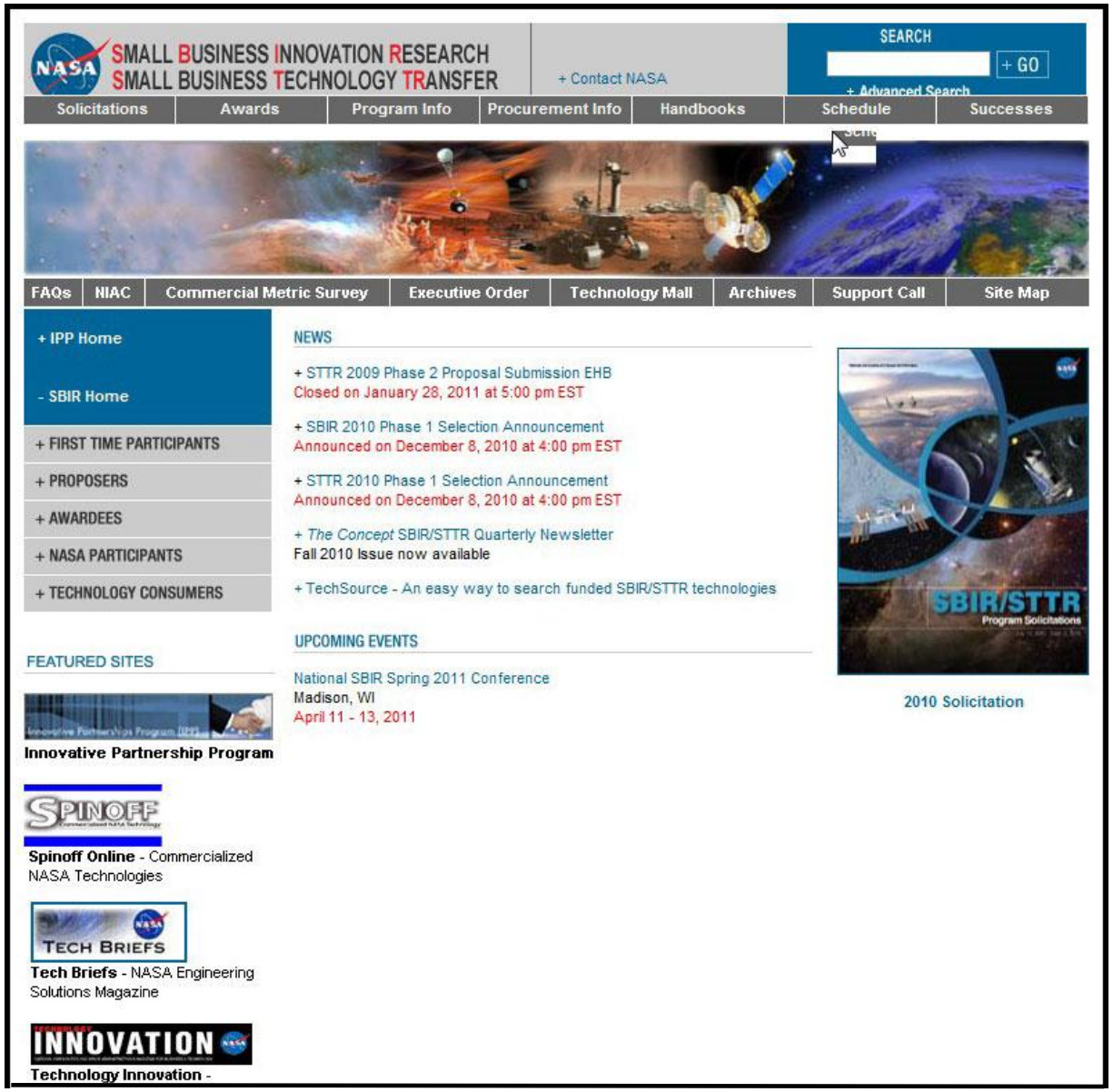
Lithium ion batteries supplied by Yardney Technical Products, Inc.

Planetary gearboxes for robotic arm supplied by Starsys Research (purchased by Sierra Nevada Corp.)



How Should I Proceed ?

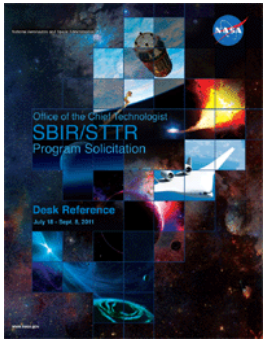
http://sbir.gsfc.nasa.gov



Inherent Challenges of Space Systems

- **Surviving Launch Conditions: high g-load, vibration, payload fairing, deployment**
- **Functioning in Extreme Environments: radiation, temperature, gravity, vacuum**
- **Limiting Power Availability**
- **High Degree of Autonomy and Reliability**
- **Long Range Communication and Navigation**

Path to a Winning Proposal



- **Review prior year solicitation:**
  http://sbir.nasa.gov/
- **Search and identify specific technical areas (subtopics) and lead center(s) of your interest**
- **Request subject matter expert contact information from respective field center program POCs**
- **E-mail/Call technical POCs and initiate dialogues**

- **Learn technology needs, priorities, and funding gaps**
- **Visit and brief NASA on your companies capabilities, if the opportunity presents itself**

SBIR/STTR Center Points of Contact - 1

- Ames Research Center (ARC)
- Luis Mederos, 650-604-5268, Luis.Mederos@nasa.gov (HEOMD)
- Kim Hines, 650-604-5582, Kimberly.K.Hines@nasa.gov

- Dryden Flight Research Center (DFRC)
- Yohan Lin, 661-276-3155, Yohan.Lin@nasa.gov

- Glenn Research Center (GRC)
- Gynelle Steele, 216-433-8258,Gynelle.C.Steele@nasa.gov (ARMD)
- Dean Bitler, 216-433-2226, Dean.W.Bitler@nasa.gov
- Hung Nguyen, 216-433-6590, Hung.D.Nguyen@nasa.gov

- Goddard Space Flight Center (GSFC)
- Thomas Bagg, 301-286-1024, Thomas.C.Bagg@nasa.gov

- Jet Propulsion Laboratory (JPL)
- Carol Lewis, 818-354-3767, Carol.R.Lewis@jpl.nasa.gov
- Richard Terrile, 818-354-6158, Richard.J.Terrile@jpl.nasa.gov (SMD)
- Byron Jackson, 818-354-1246, Byron.L.Jackson@jpl.nasa.gov

- Johnson Space Center (JSC)
- Kathy Packard, 281-244-5378, Kathryn.B.Packard@nasa.gov

SBIR/STTR Center Points of Contact - 2

- **Kennedy Space Center (KSC)**
- **Hetal Miranda, 321-867-9259, Hetal.Miranda@nasa.gov**

- **Langley Research Center (LaRC)**
- **Bob Yang, 757-864-8020, Robert.L.Yang@nasa.gov (ESMD)**
- **Kimberly Graupner, 757-864-8618, Kimberly.E.Graupner@nasa.gov**

- **Marshall Space Flight Center (MSFC)**
- **Lynn Garrison, 256-544-6719, Virginia.B.Garrison@nasa.gov**

- **Stennis Space Center (SSC)**
- **Joseph Grant, 228-688-2103, Joseph.Grant-1@nasa.gov**

NASA SBIR 2012 Process Scenario

Proposal Submission

SBIR – Eligibility Checkpoints

- Organized for-profit U.S. small business (500 or fewer employees)
- At least 51% U.S. owned and independently operated
- Small business located in the U.S.
- P.I.'s primary employment must be with small business during the project
- For Phase I, no more than 1/3 of funding less profit can be subcontracted, 1/2 for Phase II

STTR – Eligibility Checkpoints

- **Small business must perform a minimum of 40% of the work; research institution a minimum of 30%**
- **Research institution is a FFRDC, college or university, or non-profit research institution**
- **No size limit on research institution**
- **Small business must manage and control the STTR funding agreement**
- **Principal Investigator may be at the small business or research institution**

Submission Process

- **All proposals are submitted electronically via the internet**
- **Make sure all parts of your proposal are received on time – late proposals are rejected**
- **Proposals are screened for administrative completeness and turned over to the managing NASA Center for technical review**

Some Important Facts to Remember

- All required items of information must be contained in your proposal – carefully follow directions
- Eligibility is determined at time of award
- The PI is not required to have a Ph.D.
- The PI is required to have expertise to oversee project scientifically and technically
- Applications may be submitted to different agencies for similar work
- Awards may not be accepted from different agencies for duplicative projects
- Do not plan on using Government facilities unless they are not available in the private sector

Proposal Review & Selection Criteria

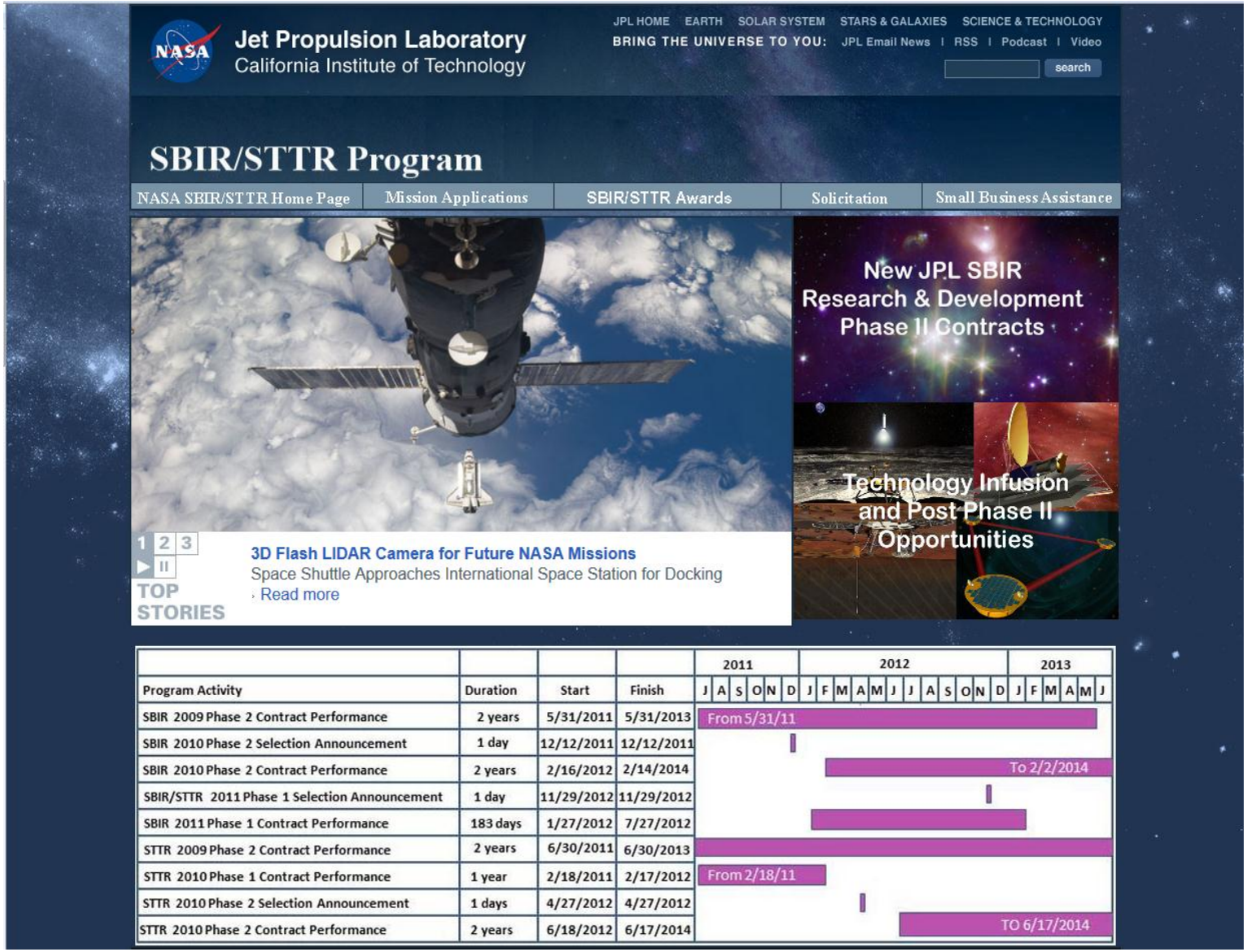
- **Proposal Review**
  - Factor 1: scientific/technical merit and feasibility (50%)
  - Factor 2: experience, qualifications and facilities (25%)
  - Factor 3: effectiveness of the proposed work plan (25%)
  - Factor 4: commercial merit and feasibility (adjectival)

- **Proposal Ranking and Selection**
  - NASA Project/Mission Alignment
  - Value, Priority and Infusion Potentials
  - Champion/Advocate

Nature of NASA SBIR & STTR Contracts

- **SBIR contracts are fixed price contracts to be completed on a best effort basis**
- **Company will own resulting intellectual property (data, copyrights, patents, etc.)**
- **Government has royalty-free rights for government use of intellectual property**
- **Government protects data from public dissemination for four years after contract ends**

http://sbir.jpl.nasa.gov



Program Activity	Duration	Start	Finish
SBIR 2009 Phase 2 Contract Performance	2 years	5/31/2011	5/31/2013
SBIR 2010 Phase 2 Selection Announcement	1 day	12/12/2011	12/12/2011
SBIR 2010 Phase 2 Contract Performance	2 years	2/16/2012	2/14/2014
SBIR/STTR 2011 Phase 1 Selection Announcement	1 day	11/29/2012	11/29/2012
SBIR 2011 Phase 1 Contract Performance	183 days	1/27/2012	7/27/2012
STTR 2009 Phase 2 Contract Performance	2 years	6/30/2011	6/30/2013
STTR 2010 Phase 1 Contract Performance	1 year	2/18/2011	2/17/2012
STTR 2010 Phase 2 Selection Announcement	1 days	4/27/2012	4/27/2012
STTR 2010 Phase 2 Contract Performance	2 years	6/18/2012	6/17/2014